Programming in C# / Creating Apps in C# and .Net Core - TTCN20483

Learn practical, job-ready C# and .NET Core skills to confidently create, organize, and manage real software projects.

Duration: 5 Days
Skill Level: Introductory
Available Format: Instructor-Led Online; Instructor-Led, Onsite In Person ; Blended; On Public Schedule

This course helps you learn how to build real applications using modern C# and .NET Core in a way that feels clear, practical, and approachable. Whether you are switching to C# from another language or starting fresh with .NET development, you will get the support and structure you need to succeed. You will write clean, reliable code, organize it with classes and interfaces, and gain the confidence to design features that are easy to manage and extend. You will work with files and databases, build simple user interfaces, and keep your applications responsive using async and multi-threading techniques. Along the way, you will explore how to handle errors gracefully, access remote data, and keep your projects performing well. Every topic includes hands-on activities to help you apply what you learn right away. This is a great next step if you want to sharpen your skills, prepare for a new project, or feel more confident working on a development team. The course is taught live by an experienced instructor who makes space for your questions, guides your learning, and keeps things engaging. You will leave with skills that apply directly to real development work and a clear sense of how to keep growing.

What You'll Learn

Overview

Programming in C# / Creating Apps in C# and .NET Core is a hands-on, expert-led course designed to help you become confident and capable building real-world applications using C# and the modern .NET Core platform. C# is used everywhere from

enterprise software to cloud services and desktop apps, and this course gives you the practical skills you need to write clean, efficient, and well-structured code that supports performance, reliability, and long-term growth. With a focus on doing rather than just watching, you will gain the technical know-how to apply these skills where they matter most.

Throughout the course, you will build your skills in a way that connects directly to real development work. You will learn how to structure code using classes, interfaces, and methods so your applications are easier to read, test, and maintain. You will practice handling errors gracefully, working with files and databases, and designing applications that stay responsive and reliable. By focusing on modern patterns like async programming and learning to access data both locally and remotely, you will be better prepared to solve common development challenges in a thoughtful and scalable way.

This course is for developers who need to learn or strengthen their C# programming skills. Whether you are moving into a new role, joining a project that uses .NET, or updating your skills for modern development practices, you will benefit from a supportive environment where an expert instructor leads you through each concept step by step. With about 50 percent of the class dedicated to hands-on labs, you will get plenty of practice applying what you learn so you walk away ready to build useful, reliable applications with confidence.

This independent course aligns with the topics and skills in Microsoft Official Curriculum (MOC) course 20483.

Objectives

This course is designed to help experienced C# developers gain the practical C# and .NET Core skills needed to build modern, reliable, and professional applications. You will walk away with a strong foundation in core development concepts and hands-on experience you can use right away on real projects.

By the end of this course, you will be able to:

- **Write clean, structured C# code using modern syntax and tools**. Learn how to use top-level statements, global usings, and other updated features to keep your code simple, readable, and easy to manage.
- **Build reusable code with methods, classes, and interfaces.** Understand how to organize logic into meaningful parts that make your applications easier to develop, test, and maintain over time.

- **Handle errors properly and keep your applications stable**. Gain experience using exception handling, logging, and tracing so you can build apps that behave reliably in the real world.
- **Work with data using files, streams, and databases.** Practice reading and writing data from files, using serialization, and accessing databases with Entity Framework and LINQ to build data-driven applications.
- **Create responsive apps that stay fast and smooth**. Use tasks, async programming, and threading to keep your applications responsive even during long operations or data processing.
- **Design modern user interfaces and connect to remote data**. Explore simple ways to build interfaces using MAUI, Blazor, or ASP.NET and learn how to send and receive data across the web for more connected experiences.

Need different skills or topics? If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. We offer additional C#, .Net Core and Visual Studio application development, web development, SOLID development, test driven development, .Net Secure coding, services and other related topics that may be blended with this course for a track that best suits your needs. Please inquire for details.

Audience

Developers attending this course should have incoming experience using C# to complete basic programming tasks. More specifically, students should have hands-on experience using C# that demonstrates their understanding of the following:

- How to name, declare, initialize and assign values to variables within an application.
- How to use: arithmetic operators to perform arithmetic calculations involving one or more variables; relational operators to test the relationship between two variables or expressions; logical operators to combine expressions that contain relational operators.
- How to create the code syntax for simple programming statements using C# language keywords and recognize syntax errors using the Visual Studio IDE.
- How to create a simple branching structure using an IF statement.
- How to create a simple looping structure using a For statement to iterate through a data array.
- How to use the Visual Studio IDE to locate simple logic errors.
- How to create a Function that accepts arguments (parameters and returns a value of a specified type).
- How to recognize the classes and methods used in a program.

Next Steps: We offer a wide variety of follow on courses for .Net development, web development, SOLID design, .Net services, .Net secure coding and others. Please see our **Microsoft Developer Training Suite** list of courses for recommended next steps.

Pre-Requisites

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Agenda

Please note that this list of topics is based on our standard course offering, evolved from current industry uses and trends. We will work with you to tune this course and level of coverage to target the skills you need most. Course agenda, topics and labs are subject to adjust during live delivery in response to student skill level, interests and participation. The course tools, topics, use cases and hands-on labs can also be easily adjusted to suit your specific needs, goals or requirements. Please inquire for details and options.

Chapter 1: Review of C# Syntax & New Features

Get started writing clean, modern C# code with updated features and the tools you will use throughout the course.

- Understand Visual Studio and project setup
- Compare .NET Core and .NET Framework

- Create simple console applications
- Use top-level statements effectively
- Apply global usings to clean code
- Explore core C# building blocks

Chapter 2: Creating Methods, Handling Exceptions, and Monitoring Applications

Learn how to organize your code, manage errors gracefully, and keep applications running smoothly using real-world techniques.
- Write and call reusable methods
- Create overloaded methods and optional parameters
- Handle exceptions to improve stability
- Monitor applications using logs and tracing
- Track errors with real-world techniques
- Build smarter, more reliable applications

Chapter 3: Basic Types and Constructs of C#

Build a solid foundation by working with core data types, collections, and events to structure your application logic.
- Create and use structs and enums
- Organize data with collections
- Store and retrieve items easily
- Loop through data the right way
- Subscribe to and handle events
- Make code flexible with core types

Chapter 4: Creating Classes and Implementing Type-Safe Collections

Learn how to design custom types that are easy to reuse, maintain, and apply to real projects.
- Define and create classes
- Build and use interfaces
- Organize code for reusability
- Implement generic collections safely
- Make types easy to maintain
- Structure applications the smart way

Chapter 5: Creating a Class Hierarchy by Using Inheritance

Use inheritance to build connected class structures that let you reuse logic and extend your applications easily.

- Create base and derived classes
- Extend functionality through inheritance
- Reuse code across related types
- Simplify changes with structured hierarchy
- Improve application flexibility with design
- Practice real-world class structures

Chapter 6: Reading and Writing Local Data

Work with local files and data streams to store, read, and manage information efficiently within your applications.

- Read and write files with C#
- Serialize and deserialize application data
- Use streams for large data handling
- Have and load data easily
- Work with different file formats
- Connect applications to local storage

Chapter 7: Accessing a Database

Learn how to connect to a database, retrieve and update data, and build useful data-driven features.

- Set up Entity Framework connections
- Query databases using LINQ
- Manage data through C# code
- Build data-driven application features
- Perform basic create, read, update, delete
- Explore real-world database scenarios

Chapter 8: Accessing Remote Data

Send and receive information across the web to build more connected and useful applications.

- Send requests to web services
- Receive and process remote data
- Connect applications to external APIs

- Work with online data sources
- Build lightweight web-connected apps
- Handle remote data safely

Chapter 9: Designing the User Interface for a Graphical Application

Explore different ways to build user interfaces for desktop or web apps that look good and respond to users.

- Create MAUI apps for cross-platform use
- Build simple UIs with Blazor
- Develop ASP.NET web applications
- Understand UI layout basics
- Connect user actions to functionality
- Make user-friendly and responsive designs

Chapter 10: Improving Application Performance and Responsiveness

Keep your apps fast and responsive by learning techniques that prevent delays and manage background work.

- Use tasks for multitasking operations
- Handle long-running processes smoothly
- Apply async and await correctly
- Coordinate work across multiple threads
- Improve app speed and responsiveness
- Build better user experiences

Chapter 11: Creating Reusable Types and Assemblies

Add flexibility to your applications by creating reusable code and working with advanced features like attributes and reflection.

- Inspect code with reflection
- Create and use custom attributes
- Work with object metadata
- Package reusable code cleanly
- Add flexible functionality to apps
- Build smarter, scalable applications

Follow On Courses

TT8320-N	.Net Secure Coding Camp	Attacking and Securing C# / ASP.Net Core Web Applications
TTCN20486	Developing ASP.NET Core 9.x MVC Web Applications (Intermediate C#)
TTCN2155	Intermediate C#	Patterns, Generics, Threading, Database, Entity Framework, UI & More

Related Courses

TTCN10975	Getting Started with Programming in C# / .Net Core for Non-Developers
TTCN20486	Developing ASP.NET Core 9.x MVC Web Applications (Intermediate C#)
TTCN2155	Intermediate C#	Patterns, Generics, Threading, Database, Entity Framework, UI & More
TT8320-N	.Net Secure Coding Camp	Attacking and Securing C# / ASP.Net Core Web Applications

Setup Made Simple! All of our course software, digital course files or course notes, labs, data sets and solutions, live coaching support channels and rich extended learning and post training resources are provided for you in our easy access, single source, no install required online Learning Experience Platform (LXP), remote lab and content environment. Or we can provide a local installation (trial edition) to setup and use on your machine. Access periods and versions vary by course. Please inquire about set up details and options for your specific course of interest. Regardless of setup option, we will collaborate with you to ensure your team is set up and ready to go well in advance of the class.

Ways to Learn: At Trivera, we believe that Experience is Everything. Our customizable, hands-on courses are delivered live online, onsite, or in a blended format for maximum flexibility. We provide real-time expert-led training and coaching for all skill levels, from small groups to enterprise-wide programs, ensuring every learner gains the latest, most relevant job-ready skills they can apply with confidence. This course is also available for individuals or small groups on our extensive Public Schedule (see current dates below). We look forward to helping you take the next steps in your modern web developer learning journey.

For More Information

Please contact us or call 844-475-4559 toll free for more information about our training services (instructor-led, self-paced or blended), coaching and mentoring services, public course enrollment or questions, partner programs, courseware licensing options and more.